What is Claimed is:

1. A method of producing a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a graft tissue conduit and a second aperture in a side wall defined by first and second ends of a body tissue conduit in a patient using a hollow annular connector having a first portion and a second portion, wherein the first portion has a plurality of first members, wherein a distal perimeter is defined by at least a first group of the plurality of first members, and wherein a first spacing is defined between at least the first group of first members and a third portion of the connector proximal to the first group of first members, comprising:

introducing the graft tissue conduit into the hollow connector so that tissue of the graft tissue conduit about the first aperture is retained by at least a second group of the plurality of first members and so that at least the first end of the graft tissue conduit extends out of the hollow connector via the second portion;

deforming the connector so that the distal perimeter collapses;

approximating the first and second apertures so that at least the first group of first members of the connector extends into the body tissue conduit via the second aperture; and

reforming the connector so that the distal perimeter expands, so that the first spacing decreases, and so that at least the first group of first members and the third portion of the connector press together the side walls of the body tissue conduit and the graft tissue conduit annularly around the first and second apertures.

2. The method defined in claim 1, wherein the first group of first members at least includes the second group of first members so that tissue of the graft tissue conduit extends from within the lumen of the body tissue conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

3. The method defined in claim 1, wherein the deforming comprises:

annularly compressing the connector.

4. The method defined in claim 1 further comprising:

before the deforming, providing a delivery tool configured to retain a retainable portion of the connector proximal to the first group of first members, and

wherein the deforming the connector comprises retaining the retainable portion of the connector with the delivery tool.

5. The method defined in claim 4, wherein the reforming the connector further comprises:

releasing the retainable portion of the connector from the delivery tool.

6. A method of producing a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a graft tissue conduit and a second aperture in a side wall defined by first and second ends of a body tissue conduit in a patient using a hollow annular connector having a distal

axial portion, a proximal axial portion, and a medial portion therebetween, wherein the distal axial portion has a plurality of first members and the proximal axial portion has a plurality of second members, wherein both a distal perimeter defined by at least a first group of the plurality of first members and a proximal perimeter defined by the second members are larger than a medial perimeter of the medial portion, and wherein an axial spacing is defined between at least the first group of first members and the second members, comprising:

introducing the side wall of the graft tissue conduit into the hollow annular connector so that tissue of the graft tissue conduit about the first aperture is retained by at least a second group of the plurality of first members and so that at least the first end of the graft tissue conduit extends out of the hollow connector via the proximal portion;

deforming the connector so that the distal perimeter collapses;

approximating the first and second apertures so that at least the first group of first members of the connector extends into the body tissue conduit via the second aperture; and

reforming the connector so that the distal perimeter expands, so that the axial spacing decreases, and so that at least the first group of first members and the second members press together the side walls of the body tissue conduit and the graft tissue conduit annularly around the first and second apertures.

7. The method defined in claim 6, wherein the first group of first members at least includes the second group of first members so that tissue of the graft tissue conduit extends from within the lumen of the body tissue

conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

8. The method defined in claim 6, wherein the deforming comprises:

annularly compressing the connector.

9. The method defined in claim 6 further comprising:

before the deforming, providing a delivery tool configured to retain a retainable portion of the connector proximal to the first group of first members, and

wherein the deforming the connector comprises retaining the retainable portion of the connector with the delivery tool.

10. The method defined in claim 9, wherein the reforming the connector further comprises:

releasing the retainable portion of the connector from the delivery tool.

11. A method of producing a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a graft tissue conduit and a second aperture in a side wall defined by first and second ends of a body tissue conduit in a patient using a hollow annular connector having a first axial end portion, a second axial end portion, and a medial portion therebetween, wherein the medial portion has a plurality of first members about an opening, wherein a distal perimeter is defined by at least a first

group of the plurality of first members, and wherein a first spacing is defined between at least the first group of first members and the medial portion, comprising:

introducing the graft tissue conduit into the hollow connector so that tissue of the graft tissue conduit about the first aperture is retained by at least a second group of the plurality of first members and so that the first and second ends of the graft tissue conduit extend out of the hollow connector via the first and second axial end portions, respectively;

deforming the connector so that the distal perimeter collapses;

approximating the first and second apertures so that at least the first group of first members of the connector extends into the body tissue conduit via the second aperture; and

reforming the connector so that the distal perimeter expands, so that the first spacing decreases, and so that at least the first group of first members and the medial portion press together the side walls of the body tissue conduit and the graft tissue conduit annularly around the first and second apertures.

12. The method defined in claim 11, wherein the first group of first members at least includes the second group of first members so that tissue of the graft tissue conduit extends from within the lumen of the body tissue conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

13. The method defined in claim 11, wherein the deforming comprises:

annularly compressing the connector.

14. The method defined in claim 11, wherein the deforming comprises:

axially compressing the connector.

15. The method defined in claim 11 further comprising:

before the deforming, providing a delivery tool configured to retain a retainable portion of the connector proximal to the first group of first members, and

wherein the deforming the connector comprises retaining the retainable portion of the connector with the delivery tool.

16. The method defined in claim 15, wherein the reforming the connector further comprises:

releasing the retainable portion of the connector from the delivery tool.

17. A connector for use in making a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a tubular graft tissue conduit and a second aperture in a side wall defined by first and second ends of a tubular body tissue conduit in a patient, the connector comprising:

a structure that is substantially annularly continuous but annularly enlargeable about its longitudinal axis, the structure including:

a first portion, wherein the first portion includes a plurality of first members extending away from the structure, wherein a distal perimeter is defined by at least a first group of the plurality of

first members configured to engage the interior wall of the body tissue conduit about the second aperture, and wherein a second group of the plurality of first members is configured to engage the graft tissue conduit about the first aperture; and

a second portion proximal to the first group of first members, wherein a first spacing is defined between at least the first group of first members and the second portion, and wherein the structure is configured to expand from a deformed configuration having a collapsed distal perimeter to an expanded configuration having an expanded distal perimeter.

18. The connector defined in claim 17, wherein the first and second groups of first members are substantially radially aligned with respect to a common axis.

19. The connector defined in claim 18, wherein the first members of the first group extend distally away from the first portion of the structure and wherein the first members of the second group extend proximally away from the first portion of the structure.

20. The connector defined in claim 19, wherein each of the first members of the first group has a hook with a sharp end portion for engaging tissue of the interior wall of the body tissue conduit.

21. The connector defined in claim 20, wherein each of the first members of the second group has a hook with a sharp end portion for engaging tissue of the interior wall of the graft tissue conduit.

22. The connector defined in claim 18, wherein the first group of first members at least includes the second group of first members so that the first group of first members is configured to engage both the graft tissue conduit about the first aperture and the interior wall of the body tissue conduit about the second aperture, so that tissue of the graft tissue conduit can extend from within the lumen the body tissue conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

23. The connector defined in claim 22, wherein each of the first members of the first group has a barbed end portion.

24. A connector for use in making a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a tubular graft tissue conduit and a second aperture in a side wall defined by first and second ends of a tubular body tissue conduit in a patient, the connector comprising:

a hollow structure that is substantially annularly continuous but annularly enlargeable about its longitudinal axis and configured for disposition substantially perpendicular to the longitudinal axis of the tubular graft conduit and the tubular body conduit, the structure including:

a distal axial portion, wherein a plurality of first members extend away from the distal axial portion in an annular array that is substantially concentric with the structure, wherein a distal perimeter is defined by at least a first group of the plurality of

first members configured to engage the interior wall of the body tissue conduit about the second aperture, and wherein a second group of the plurality of first members is configured to engage the graft tissue conduit about the first aperture;

a proximal axial portion, wherein a proximal perimeter is defined by a plurality of second members of the proximal axial portion configured to engage the exterior wall of the body tissue conduit about the second aperture; and

a medial axial portion between the distal axial portion and the proximal axial portion, wherein an axial spacing is defined between at least the first group of first members and the plurality of second members, and wherein the structure is configured to expand from a deformed configuration having a collapsed distal perimeter and a first axial spacing to an expanded configuration having an expanded distal perimeter and a second axial spacing.

25. The connector defined in claim 24, wherein the medial axial portion is configured to extend in a first direction along the exterior of the graft tissue conduit about the first aperture substantially perpendicular to the longitudinal axis of the graft tissue conduit.

26. The connector defined in claim 24, wherein the distal axial portion is configured to receive tissue of the graft tissue conduit about the first aperture extending up through the hollow interior of the structure in a direction substantially perpendicular to the longitudinal axis of the graft tissue conduit.

27. The connector defined in claim 24, wherein the collapsed distal perimeter is smaller than the perimeter of the second aperture.

28. The connector defined in claim 24, wherein the second axial spacing is smaller than the first axial spacing.

29. The connector defined in claim 24, wherein at least the first group of first members and the plurality of second members are configured to resiliently press the graft tissue conduit and the body tissue conduit into annular contact with one another annularly around the first and second apertures.

30. The connector defined in claim 24, wherein the second axial spacing is substantially equal to the sum of the wall thickness of the graft tissue conduit and the wall thickness of the body tissue conduit.

31. The connector defined in claim 24, wherein the first and second groups of first members are substantially radially aligned with respect to the longitudinal axis of the structure.

32. The connector defined in claim 31, wherein the first members of the first group extend distally away from the proximal axial portion of the structure and wherein the first members of the second group extend proximally toward the proximal axial portion of the structure.

33. The connector defined in claim 32, wherein each of the first members of the first group has a hook

with a sharp end portion for engaging tissue of the interior wall of the body tissue conduit.

34. The connector defined in claim 32, wherein each of the first members of the second group has a hook with a sharp end portion for engaging tissue of the interior wall of the graft tissue conduit.

35. The connector defined in claim 31, wherein the first group of first members at least includes the second group of first members so that the first group of first members is configured to engage both the graft tissue conduit about the first aperture and the interior wall of the body tissue conduit about the second aperture, so that tissue of the graft tissue conduit can extend from within the lumen the body tissue conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

36. The connector defined in claim 35, wherein each of the first members of the first group has a barbed end portion for engaging tissue of the graft tissue conduit and tissue of the interior wall of the body tissue conduit.

37. A connector for use in making a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a tubular graft tissue conduit and a second aperture in a side wall defined by first and second ends of a tubular body tissue conduit in a patient, the connector comprising:

a hollow structure that is substantially annularly continuous but enlargeable both annularly about and axially along its longitudinal axis, and configured for disposition substantially coincident with the longitudinal axis of the graft body conduit and substantially parallel to the longitudinal axis of the tubular body conduit, the structure including:

a first axial end portion;

a second axial end portion; and

a medial portion between the first and second axial end portions, wherein the medial portion includes a plurality of first members extending away from the structure and defining an opening in the medial portion, wherein a distal perimeter is defined by at least a first group of the plurality of first members configured to engage the interior wall of the body tissue conduit about the second aperture, wherein a second group of the plurality of first members is configured to engage the graft tissue conduit about the first aperture, wherein a medial spacing is defined between at least the first group of first members and a proximal portion of the medial portion proximal to the first group of first members, and wherein the structure is configured to expand from a deformed configuration having a collapsed distal perimeter and a first medial spacing to an expanded configuration having an expanded distal perimeter and a second medial spacing.

38. The connector defined in claim 37, wherein the first axial end portion is configured to extend in a first direction along the exterior of the graft tissue conduit from the first aperture, and wherein the second axial end portion is configured to extend in a second direction substantially opposite the first direction

along the exterior of the graft tissue conduit from the first aperture.

39. The connector defined in claim 38, wherein each of the first and second directions is substantially parallel to the longitudinal axis of the graft tissue conduit.

40. The connector defined in claim 38, wherein each axial end portion is configured to extend only part way around a circumference of the exterior of the graft tissue conduit.

41. The connector defined in claim 38, wherein each axial end portion is configured to extend all the way around a circumference of the exterior of the graft tissue conduit.

42. The connector defined in claim 37, wherein the medial portion is configured to receive tissue of the graft tissue conduit about the first aperture extending up through the opening in the medial portion in a direction substantially perpendicular to the longitudinal axis of the graft tissue conduit.

43. The connector defined in claim 37, wherein the collapsed distal perimeter is smaller than the perimeter of the second aperture.

44. The connector defined in claim 37, wherein the second medial spacing is smaller than the first medial spacing.

45. The connector defined in claim 37, wherein at least the first group of first members and the proximal portion of the medial portion proximal to the first group of first members are configured to resiliently press the graft tissue conduit and the body tissue conduit into annular contact with one another annularly around the first and second apertures.

46. The connector defined in claim 37, wherein the second medial spacing is substantially equal to the sum of the wall thickness of the graft tissue conduit and the wall thickness of the body tissue conduit.

47. The connector defined in claim 37, wherein the first and second groups of first members are substantially radially aligned with respect to an ostium axis of the opening that is substantially perpendicular to the longitudinal axis of the structure.

48. The connector defined in claim 47, wherein the first members of the first group extend distally away from the structure and wherein the first members of the second group extend proximally away from the structure.

49. The connector defined in claim 48, wherein each of the first members of the first group has a hook with a sharp end portion for engaging tissue of the interior wall of the body tissue conduit.

50. The connector defined in claim 48, wherein each of the first members of the second group has a hook with a sharp end portion for engaging tissue of the interior wall of the graft tissue conduit.

51. The connector defined in claim 50, wherein the proximal portion of the medial portion includes the second group of first members.

52. The connector defined in claim 47, wherein the first group of first members at least includes the second group of first members so that the first group of first members is configured to engage both the graft tissue conduit about the first aperture and the interior wall of the body tissue conduit about the second aperture, so that tissue of the graft tissue conduit can extend from within the lumen the body tissue conduit to outside of the body tissue conduit, and so that body fluid of the patient can flow between the lumen of the graft tissue conduit and the lumen of the body tissue conduit via the connection.

53. The connector defined in claim 52, wherein each of the first members of the first group has a barbed end portion for engaging tissue of the graft tissue conduit and tissue of the interior wall of the body tissue conduit.

54. Apparatus for producing a hollow anastomotic connection between a first aperture in a side wall defined by first and second ends of a graft tissue conduit and a second aperture in a side wall defined by first and second ends of a body tissue conduit in a patient, comprising:

a connector having a structure that is substantially annularly continuous but annularly enlargeable about its longitudinal axis, the structure including:

a first portion, wherein the first portion includes a plurality of first members extending away from the structure, wherein a distal perimeter is defined by at least a first group of the plurality of first members configured to engage the interior wall of the body tissue conduit about the second aperture, and wherein a second group of the plurality of first members is configured to engage the graft tissue conduit about the first aperture; and

a second portion proximal to the first group of first members, wherein a first spacing is defined between at least the first group of first members and the second portion, and wherein the structure is configured to expand from a deformed configuration having a collapsed distal perimeter to an expanded configuration having an expanded distal perimeter; and

a delivery tool having a first configuration and a second configuration, wherein the first configuration is configured for retaining a retainable portion of the connector proximal to the first group of first members to deform the connector structure from the expanded configuration to the deformed configuration and to advance the collapsed distal perimeter of the connector into the lumen of the body tissue conduit via the second aperture, and wherein the second configuration is configured for releasing the retainable portion of the connector to reform the connector structure from the deformed configuration to the expanded configuration.

55. Apparatus for producing a hollow anastomotic connection between a first aperture in a side wall of a graft tissue conduit and a second aperture in a

side wall of a body tissue conduit in a patient, comprising:

a first hollow annular connector, wherein the first connector is configured for installation in the first aperture in the side wall of the graft tissue conduit; and

a second hollow annular connector, wherein the second connector is configured for disposition annularly within the second aperture in the side wall of the body tissue conduit, and wherein the first connector is configured for attachment to the second connector such that the second connector is encapsulated by the first connector.